

CLAIM AMENDMENTS

1. (Previously Presented) A method of producing a multi-layered wiring board comprising:

forming an insulating layer of a photosensitive resin on a substrate, and exposing and developing said insulating layer to form holes having respective sizes in said insulating layer;

depositing a curable resin onto said insulating layer having the holes and filling the holes, and heating said curable resin to form a cured thin film from only a part of said curable resin at an interface of said insulating layer and said curable resin, leaving a part of said curable resin uncured;

removing the part of said curable resin that is uncured, but not said cured thin film, leaving via-holes where the holes were made in said insulating layer, the via-holes being smaller in size than the holes due to said cured thin film remaining in the holes on said insulating film; and

filling the via-holes with an electrical conductor, thereby forming vias.

2. (Previously Presented) The method of producing a multi-layered wiring board according to claim 1, wherein said photosensitive resin is at least one member selected from the group consisting of an epoxy resin, an epoxy-modified acrylate resin, a cationic polymerization product of an epoxy resin, a phenol resin, a melamine resin, a carboxy-modified epoxy acrylate, and a cinnamate.

3. (Previously Presented) The method of producing a multi-layered wiring board according to claim 1, wherein said curable resin comprises one of a water-soluble resin and a water-soluble cross-linking agent.

4. (Withdrawn) The method of producing a multi-layered wiring board according to claim 1, wherein said curable resin is at least one member selected from the group consisting of polymethylsiliceous siloxane, a melamine resin, an acrylate resin, and an epoxy resin.

5. (Withdrawn) The method of producing a multi-layered wiring board according to claim 1, wherein said curable resin contains rubber particles consisting of a butadiene-

acrylonitrile copolymer, and including chemically surface-roughening said cured thin film.

6. (Previously Presented) The method of producing a multi-layered wiring board according to claim 2, wherein said curable resin comprises one of a water-soluble resin and a water-soluble cross-linking agent.

7. (Withdrawn) The method of producing a multi-layered wiring board according to claim 2, wherein said curable resin is at least one member selected from the group consisting of polymethylsiliceous siloxane, a melamine resin, an acrylate resin, and an epoxy resin.

8. (Withdrawn) The method of producing a multi-layered wiring board according to claim 3, wherein said curable resin contains particles of one of calcium carbonate and polybutadiene rubber.

9. (Withdrawn) The method of producing a multi-layered wiring board according to claim 4, wherein said curable resin contains particles of one of calcium carbonate and polybutadiene rubber.

10. (Withdrawn) The method of producing a multi-layered wiring board including a plurality of stages of via-holes formed by repeating the process of claim 1, wherein the via-holes of later-formed stages are smaller in size than the via-holes of earlier formed stages.

11. (New) A method of producing a multi-layered wiring board comprising:
forming a first insulating layer of a photosensitive resin on a substrate, the photosensitive resin generating reaction components in response to irradiation by light;
exposing said first insulating layer to light, thereby generating the reaction products, and developing said first insulating layer to form holes having respective sizes in said first insulating layer;
forming a second insulating layer of a curable resin on said first insulating layer having the holes and filling the holes, said second insulating layer causing cross-linking of the reaction components upon heat treatment;

heating said first and second insulating layers to diffuse the reaction components from said first insulating layer into only a part of said second insulating layer at an interface of said first and second insulating layers, thereby forming a cross-linked layer in said second insulating layer;

without removing said cross-linked layer, removing said second insulating layer, leaving via-holes where the holes were made in said first insulating layer, the via-holes being smaller in size than the holes due to said cross-linked layer remaining in the holes on said first insulating film; and

filling the via-holes with an electrical conductor, thereby forming vias.

12. (New) The method of producing a multi-layered wiring board according to claim 11, wherein said photosensitive resin is at least one member selected from the group consisting of an epoxy resin, an epoxy-modified acrylate resin, a cationic polymerization product of an epoxy resin, a phenol resin, a melamine resin, a carboxy-modified epoxy acrylate, and a cinnamate.

13. (New) The method of producing a multi-layered wiring board according to claim 11, wherein said curable resin comprises one of a water-soluble resin and a water-soluble cross-linking agent.

14. (New) The method of producing a multi-layered wiring board according to claim 11, wherein said curable resin is at least one member selected from the group consisting of polymethylsiliceous siloxane, a melamine resin, an acrylate resin, and an epoxy resin.

15. (New) The method of producing a multi-layered wiring board according to claim 11, wherein said curable resin contains rubber particles consisting of a butadiene-acrylonitrile copolymer, and including chemically surface-roughening said second insulating layer.

16. (New) The method of producing a multi-layered wiring board according to claim 12, wherein said curable resin comprises one of a water-soluble resin and a water-soluble cross-linking agent.

17. (New) The method of producing a multi-layered wiring board according to claim 12, wherein said curable resin is at least one member selected from the group consisting of polymethylsiliceous siloxane, a melamine resin, an acrylate resin, and an epoxy resin.

18. (New) The method of producing a multi-layered wiring board according to claim 13, wherein said curable resin contains particles of one of calcium carbonate and polybutadiene rubber.

19. (New) The method of producing a multi-layered wiring board according to claim 14, wherein said curable resin contains particles of one of calcium carbonate and polybutadiene rubber.

20. (New) The method of producing a multi-layered wiring board including a plurality of stages of via-holes formed by repeating the process of claim 11, wherein the via-holes of later-formed stages are smaller in size than the via-holes of earlier formed stages.

D1 *Concluded*
